

St. Lucie

Effective Dec. 2009



Safety planning information for neighbors
of FPL's St. Lucie Nuclear Power Plant

Si desea obtener este folleto en español,
vea la información en la primera página



Effective Dec. 2009

This booklet was prepared
by Florida Power & Light
Company in cooperation with
the St. Lucie County



Department of Public
Safety, Martin County
Division of Emergency
Management and State of
Florida, Department of
Community Affairs, Division
of Emergency Management.

For additional copies,
write or phone:

**St. Lucie County Department
of Public Safety**

15305 W. Midway Rd.
Ft. Pierce, FL 34945

Telephone: (772) 462-8100

or

**Martin County Division of
Emergency Management**

800 S.E. Monterey Road,
Stuart, FL 34994

Telephone: (772) 287-1652

Para recibir una copia de
este folleto en español llame
al (772) 462-8100.

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How safe is St. Lucie Nuclear Power Plant? 2

Why is there an emergency plan? 3

Classifications of nuclear power plant events 3

What is an emergency planning area? 4

How you would be notified of an emergency 4

If you hear an outdoor warning siren 4

Radio and TV stations 5

Telephone numbers 5

For your protection 6

If you are told to stay indoors (sheltering) 6

If you are told to evacuate 6

If you are directed to emergency reception centers 6

Distribution of potassium iodide tablets 7

If you have special needs or require evacuation assistance . . 7

If you have family in a nursing home or hospital 7

If your children are in school 8

If you have livestock 9

If you grow food products 9

How St. Lucie Nuclear Power Plant works 10

Radiation: A part of everyday life 11

Emergency planning areas

Areas 1 and 2 12

Areas 3 and 4 13

Areas 5 and 6 14

Areas 7 and 8 15

Evacuation route map 16

Emergency information “at a glance” back flap

Please keep this information booklet and discard the previous copy.

How safe is St. Lucie Nuclear Power Plant?

Safety is FPL's top priority in operating the St. Lucie Nuclear Power Plant. Extra care and

time are taken to ensure safety regulations are met and even exceeded.

Nuclear energy production also is monitored closely by the Nuclear Regulatory Commission, a federal government agency. Daily inspections are conducted on-site at St. Lucie Plant to guarantee compliance with federal regulations on public health, safety and the environment.

Safe and reliable service is maintained through a variety of backup safety measures. Several identical safety systems are in place so that if one fails, others automatically go to work.

Multiple barriers for safety

The St. Lucie Plant is constructed with multiple safety barriers that keep radioactive materials in control and out of the environment. (For further information on how St. Lucie Plant operates, see page 10.)

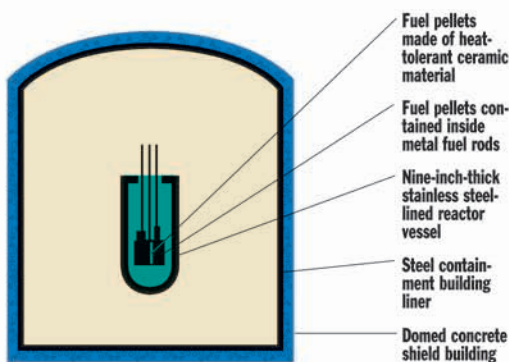
The uranium fuel is encased in half-inch long, cylindrical ceramic pellets. These pellets are stacked end-to-end inside sealed metal tubes that are resistant to corrosion, radiation and heat. These fuel tubes are part of a fuel assembly that is immersed in water in the reactor core. The core is inside a steel pressure vessel that is nine inches thick.

All this is shielded inside a containment building made of concrete more than three feet thick, laced with steel rods

and lined with a steel wall. Containment buildings are capable of withstanding severe external forces such as hurricanes, tornadoes and earthquakes — even a direct hit by a jet aircraft.

Safety is further enhanced by the fact that nuclear reactors cannot explode like an atomic bomb. The concentration of uranium fuel used is simply too low and is designed for power production.

Multiple barriers for safety



Why is there an emergency plan?

Planning is an important part of FPL's strategy to protect you and your family

in the unlikely event of an emergency at St. Lucie Plant.

State and local officials, together with FPL, have prepared a detailed emergency plan for people who live, work, visit or go to school within 10 miles of the plant. The plan is tested by evaluated exercises and inspections.

Save this booklet and share it with family members. It is your guide to the plan and its safety features. Please read it carefully and study the map at the back. Make sure you and your family know what to do in an emergency.

Classifications of nuclear plant events

The four terms below are used to describe events at nuclear power plants. Only two may involve public actions such as staying inside your home, leaving the area or going to a specified shelter. FPL notifies county, state and federal authorities in each of the following situations.

You should know these terms:

An **Unusual Event** is a minor incident such as severe weather. Because of strict regulations, a number of events must be classified and reported as "unusual events" even though they pose no threat or danger to you. *No public action is required.*

An **Alert** is a minor incident, that affects, or could potentially affect, reactor safety. There is the possibility of a small, limited release of radioactive material, but there would be no danger to you. *No public action is required.*

A **Site Area Emergency** is a more serious incident such as: a major leak from the reactor coolant system; a fire in a safety system; or an incident in which radioactive releases are possible or are occurring that will not affect the off-site population. Sirens would sound, alerting you to tune to local radio or television stations (*see page 5*) for official information.

A **General Emergency** is the most severe emergency classification. Radioactive releases that could affect the off-site population are possible or are occurring. Sirens would sound, alerting you to tune to one of the local radio or television stations (*see page 5*) for official information.

After notifying the county, state and federal authorities, FPL officials would continue to address any problems at the plant. State and county authorities are responsible for notifying area residents and taking steps to ensure public protection.

What is an emergency planning area?

Federal authorities established two emergency planning areas — a 10-mile radius and a 50-mile radius — as the basis for planning to protect the public.

Through preplanned protective actions, residents living within 10 miles of the plant will be protected from direct exposure to radiation in the unlikely event of an accident. People living within 50 miles will be protected from eating contaminated foods, or drinking contaminated milk and water.

The 10-mile area has been divided into eight evacuation/sheltering areas (see pages 12-15 and the map in this booklet). These areas were established to allow local officials to provide evacuation and/or sheltering information in terms readily understood by persons in the 10-mile area.

If there was an accident at the St. Lucie Plant, it's not likely everyone within 10 miles would be involved. The area affected would depend on

weather conditions, such as wind speed and direction, and the severity of the accident.

How you would be notified of an emergency

In the event of a serious emergency, emergency management, law enforcement and fire/rescue officials may use a variety of methods to notify people living within 10 miles of the plant:

- Sirens
- Emergency Alert System (EAS) (Radio/TV/NOAA Weather Radio)
- Emergency vehicle loudspeakers
- Door-to-door notification
- Marine interests via Marine VHF-CH 16

If you hear an outdoor warning siren:

Hearing a siren **does not** necessarily mean to evacuate.

When an outdoor warning siren is sounded, tune to local radio or television stations listed on page 5 for further instructions.

Through these broadcasts, emergency management officials will provide you accurate, timely information.

Radio and TV Stations

AM RADIO

- WJNX-1330 • WSTU-1450*
- WIRA-1400 • WPSL-1590*

FM RADIO

- WQCS-88.9* • WKGR-98.7
- WZZR-94.3 • WHLG-101.3
- WGYL-93.5 • WAVW-92.7
- WOVV-95.5 • WQOL-103.7
- WOSN-97.1 • WFLM-104.7

TELEVISION**

- WPTV-CH 5
- WPEC-CH 12
- WPBF-CH 25
- WFLX-CH 29
- WTVX-CH 34
- WTCN-CH 16*

* Emergency Alert System station

**Please consult your area cable listing for these channels.

In an emergency, sirens will sound for at least five minutes. If possible, alert your neighbors by means other than a telephone to ensure that they also heard and understood the emergency information and instructions.

Periodic siren tests are conducted by local emergency management officials on the first Thursday of March, June, September and December and last two minutes or less.

During these tests, you will hear a voice introduction, then the sirens will sound a short tone followed by a voice stating that this is a test.

Occasionally, a siren may accidentally sound because of lightning strikes or other problems. If you hear a siren and have a question, call your local county emergency management office listed below.

Telephone numbers

In the event of an emergency, state and county officials are responsible for public notification and will provide timely and accurate information. If you have questions at **any** time, call:

- **St. Lucie County Public Safety Department:** (772) 462-8100
(after business hours or on weekends, call (772) 465-5770)
- **Martin County Division of Emergency Management:**
(772) 287-1652

For your protection

State and local governments have established strict guidelines to ensure your safety in the unlikely event of an emergency at the St. Lucie Plant. Emergency officials will provide timely, accurate information and instructions. Please follow official instructions.

If you are told to stay indoors (in-place sheltering)

- Remain indoors until further notice.
- Close all doors and windows.
- Turn off all window fans. Unless instructed otherwise, leave air conditioning on with air exchange vents closed if possible.
- Cover or refrigerate food.
- Stay tuned to a local radio or television station (*see page 5*) for official information.

If you are told to evacuate, take this booklet

- Listen to a local radio or television station (*see page 5*).
- Lock all doors and windows.
- Turn off appliances (except refrigerator) and faucets.
- Leave pets inside your home with plenty of food and water. DO NOT take pets to a reception center or shelter. Animals will not be allowed into shelters.

In addition to this booklet, take the following items with you:

- Clothes for a few days.
- Medicine or prescriptions you may need.

- Toiletries (bar of soap, toothbrush, toothpaste, shaving articles, eye care and sanitary items).
- Money (cash, credit cards) and important documents such as mortgage, lease and all insurance information.
- Baby needs (formula, diapers, favorite toys).
- Portable radio and batteries.
- Sleeping bag or two blankets and a pillow for each person.
- Folding cot or lawn chair.
- Proof of occupancy such as a utility bill and photo identification.

If you are directed to emergency reception centers

Emergency officials will tell you what to do. Follow all evacuation directions. Remain calm.

- **St. Lucie County:** Residents living north of Prima Vista/ St. Lucie West Boulevard will be directed to reception centers in Indian River County and possibly Brevard County. People living south of Prima Vista/St. Lucie West Boulevard will be directed to reception centers in Palm Beach County.

- **Martin County:** Residents will be directed to reception centers in Palm Beach County.

Law enforcement officers will be stationed along evacuation routes to assist and direct you to reception centers. These centers are designed to provide adequate food, facilities and telephones for you.

Distribution of potassium iodide tablets

The Florida Department of Health considers evacuation as an effective protective measure. If conditions warrant, the health department will make potassium iodide tablets available at the reception centers.

For more information about potassium iodide, contact your county health department.

If you have special needs or require evacuation assistance

Fill out the attached postcard corresponding to your resident county and mail it immediately for special assistance in an emergency, if you:

- 1) are on life-support systems;
- 2) have a physical or mental impairment;

- 3) are hearing impaired;
- 4) are elderly or homebound and can't leave your home; or
- 5) do not have transportation or don't drive.

Evacuation transportation will be arranged for **St. Lucie County** residents with special needs.

If you live in **Martin County**, the special needs shelter is located at Challenger School, 5150 SE Willoughby Blvd., Stuart, FL 34997.

If you have a family member in a nursing home or hospital within the 10-mile emergency planning area

- These facilities follow their own evacuation procedures, so please do not try to pick up your family member.
- Check with these facilities in advance.

If your children are in school

The following schools are located within the 10-mile emergency planning area for the St. Lucie Nuclear Power Plant. The schools will follow their own evacuation procedures. As a precaution, the evacuation of schools may be considered prior to any general public action.

If your child's school (public or private) or day care facility is within the 10-mile area and is not listed below, check with that facility to verify its emergency plan.

St. Lucie County Schools

Children attending St. Lucie County schools requiring evacuation will be bused to the St. Lucie County Fairgrounds, 15601 West Midway Road, Ft. Pierce. **Local radio and television stations (see page 5) will announce when parents may pick up their children.** School personnel will supervise and care for children until parents can pick them up.

Schools in St. Lucie County that may be affected:

- Bayshore Elementary
- Bible Baptist School
- C.A. Moore Elementary
- Charter School of Ft. Pierce
- Dale Cassens School
- Dan McCarty Middle School
- Delaware Avenue School
- Fairlawn Elementary
- Faith Baptist School
- First Baptist Child Development Center
- Floresta Elementary
- Forest Grove Middle School
- Fort Pierce Central High
- Fort Pierce Elementary
- Fort Pierce School of the Arts
- Fort Pierce Westwood High
- Francis K. Sweet Elementary
- Garden City Elementary
- John Carrol High School
- Lakewood Park Elementary
- Lawnwood Elementary
- Liberty Baptist Academy
- Lincoln Park Academy
- Manatee Elementary
- Mariposa Elementary
- Morningside Academy
- Morningside Elementary
- Nau Charter K-8
- Northport Middle School
- Oak Hammock K-8
- Palm Point Lab
- Palm Vista Christian School
- Parkway Elementary
- Port St. Lucie High School
- Renaissance Charter K-8
- Rivers Edge Elementary
- Sampson Memorial Seventh Day Adventist School
- Samuel S. Gaines Academy K-8
- Savannah Ridge Elementary
- Southern Oaks Middle School
- Southport Middle School
- St. Anastasia Elementary
- St. Andrews Elementary
- St. Lucie Elementary
- St. Lucie West Centennial

- St. Lucie West Middle
- Treasure Coast Christian Academy
- Treasure Coast High School
- Village Green Elementary
- Weatherbee Elementary
- Westgate K-8
- White City Elementary
- Windmill Point Elementary
- Jensen Beach High School
- New Creations Christian Academy
- Presbyterian Early Learning School
- Small World Learning Center
- Trinity United Methodist Preschool
- Felix A. Williams Elementary

If your children attend these schools, please do not try to pick them up at the school.

Martin County Schools

Children in these Martin County schools will be transported to a special reception center at Martin County High School, 2801 S. Kanner Highway, Stuart, or to the alternate reception center at South Fork High School, 10205 SW Pratt Whitney Rd., Hobe Sound.

Local radio and television stations (see page 5) will announce when and where parents may pick up their children. School personnel will supervise and care for the children until parents can pick them up.

Schools in Martin County that may be affected:

- Apple Tree Academy
- Environmental Studies Center
- Hibiscus House
- Jensen Beach Community Church Preschool
- Jensen Beach Elementary

If you have livestock

- Place the animals in an enclosed shelter if possible. Provide for adequate ventilation to prevent overheating and suffocation.
- Leave plenty of water and food for several days (if you are told to evacuate).
- Use stored feed when possible.
- Tune to a local radio or television station and listen for further instructions and information (*see page 5*).

If you grow food products

- Do not eat or sell products until further instructions are issued by agricultural officials.
- Tune to a local radio or television station (*see page 5*) for additional instructions and information.

For more information, contact your local agricultural extension agent and ask for the brochure titled, "Agriculture and Nuclear Power in Florida."

How St. Lucie Nuclear Power Plant works

St. Lucie Nuclear Power Plant is similar to fossil-fired electric generating plants because it uses steam to generate electricity. But instead of burning oil or coal in a boiler, St. Lucie Plant uses uranium fuel inside a nuclear reactor to generate steam.

Producing electricity

Uranium atoms are split apart in a process called nuclear fission. As atoms are split inside the reactor, a large amount of heat is produced. This heat is absorbed by the first of three separate water systems in the plant called the *primary system*. The radioactive fuel is contained in the fuel assembly and does not come in contact with this water.

The primary water system is kept under pressure so that the water does not boil. The water passes through thousands of tubes in the plant's steam generators where the heat is transferred through the tube walls to another water system called the *secondary system*.

The heat turns water in the

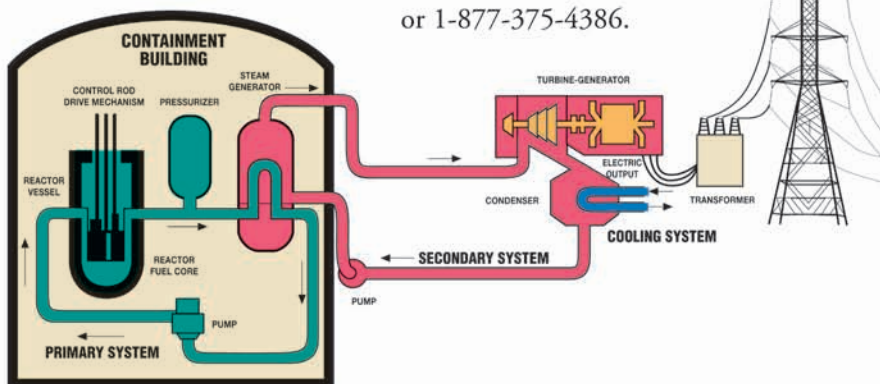
secondary system to steam. The steam pushes against the blades of a turbine, causing it to spin.

The turbine turns a generator on the same shaft to produce electricity.

As the steam leaves the turbine, it passes over hundreds of pipes carrying water from the third water system called the *cooling system*. Cooling water from the Atlantic Ocean condenses the steam back to water for reuse in the steam generator. Water from each system is physically separated from water in the other systems.

You can learn more about nuclear energy at the Energy Encounter, FPL's energy information center at St. Lucie Nuclear Power Plant. For more information, call (772) 468-4111 or 1-877-375-4386.

**How
St. Lucie
Nuclear
Power
Plant
works**



Radiation: A part of every- day life

Radiation is energy that is given off as a particle or wave. It is everywhere and can be both natural and man-made.

Radioactive elements are scattered in small amounts throughout our environment. About 82 percent of the radiation to which the average person is exposed annually in the United States comes from natural sources: our food, water, soil — even our homes. Additional radiation comes from exposure to man-made sources such as dental and medical X-rays, color televisions, computer monitors and smoke detectors. Less than *one percent* of radiation to which people are exposed comes from nuclear power plants.

Measuring radiation

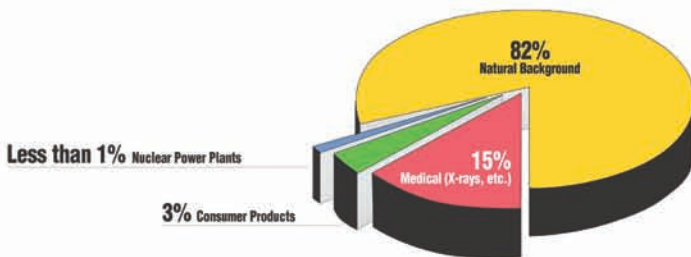
Radiation is measured in units called *rem* and *millirem* (one rem equals 1,000 millirem). Most people routinely receive an average of 360 millirem of radiation a year from all sources. A coast-to-coast jet trip results in about five millirem of radiation exposure. Living and working one mile from a nuclear power plant — 24-hours a day for an entire year — results in less than one-half of one millirem of exposure.

Radiation monitoring at St. Lucie Plant

Monitoring is done by FPL and the Florida Department of Health. Numerous measuring devices have been placed in and around the St. Lucie Nuclear Power Plant to monitor radiation levels. These instruments can detect minute amounts of natural background radiation.

If there were any increase in those radiation amounts, this constant monitoring would alert plant operators, who in turn, would notify state and county officials.

Natural Background (Soil, sunlight, etc.)	82%
Medical (X-rays, etc.)	15%
Consumer Products (T.V., smoke detectors, etc.)	3%
Nuclear Power Plants	Less than 1%

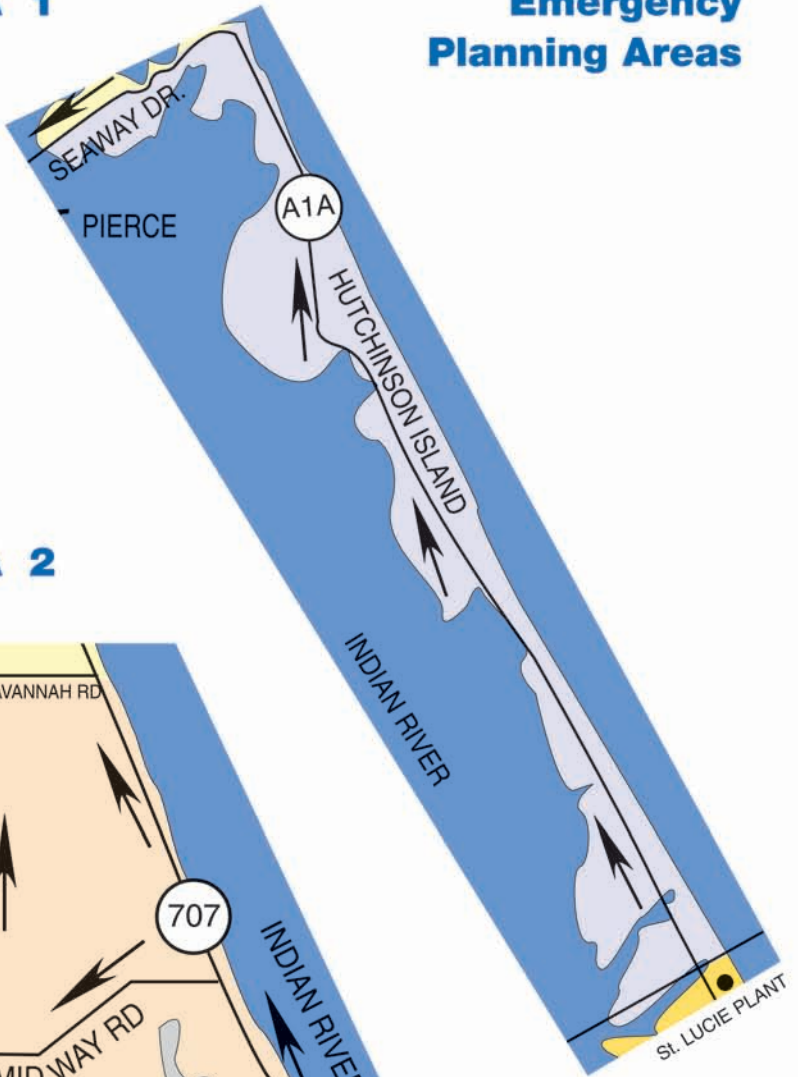


**Sources
of
radiation**

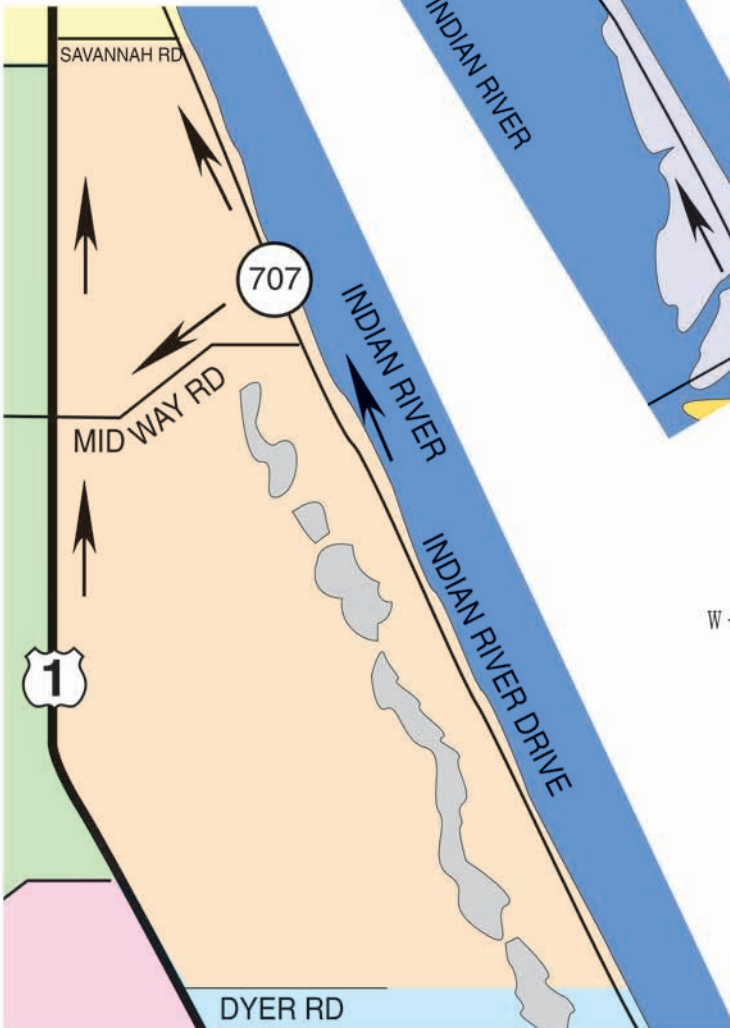
Source:
National
Council on
Radiation
Protection
Measurements

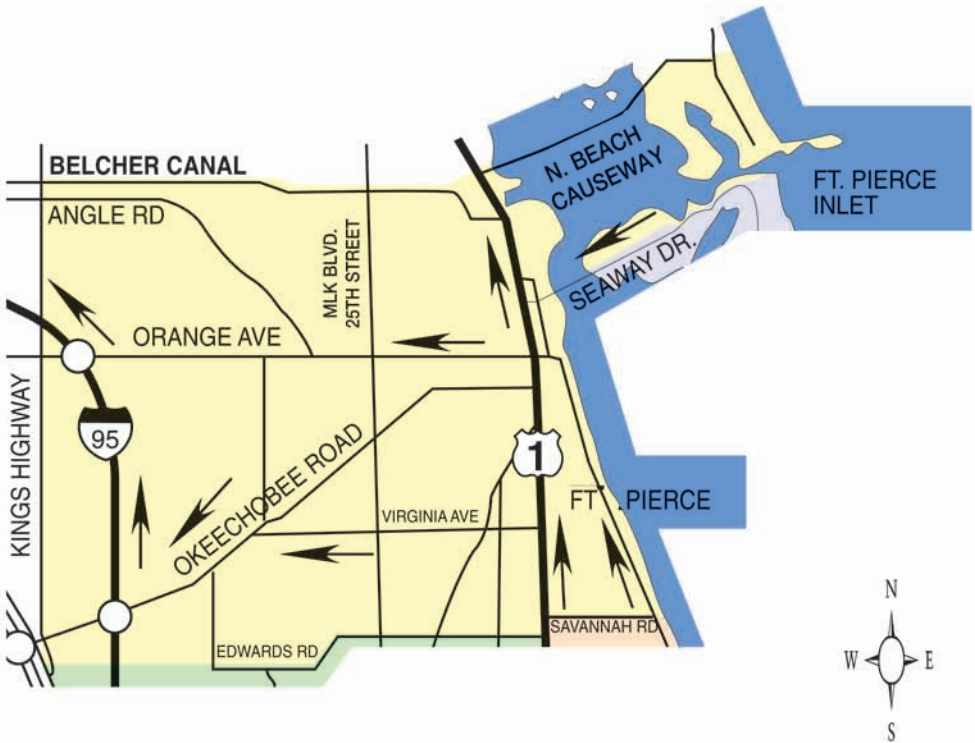
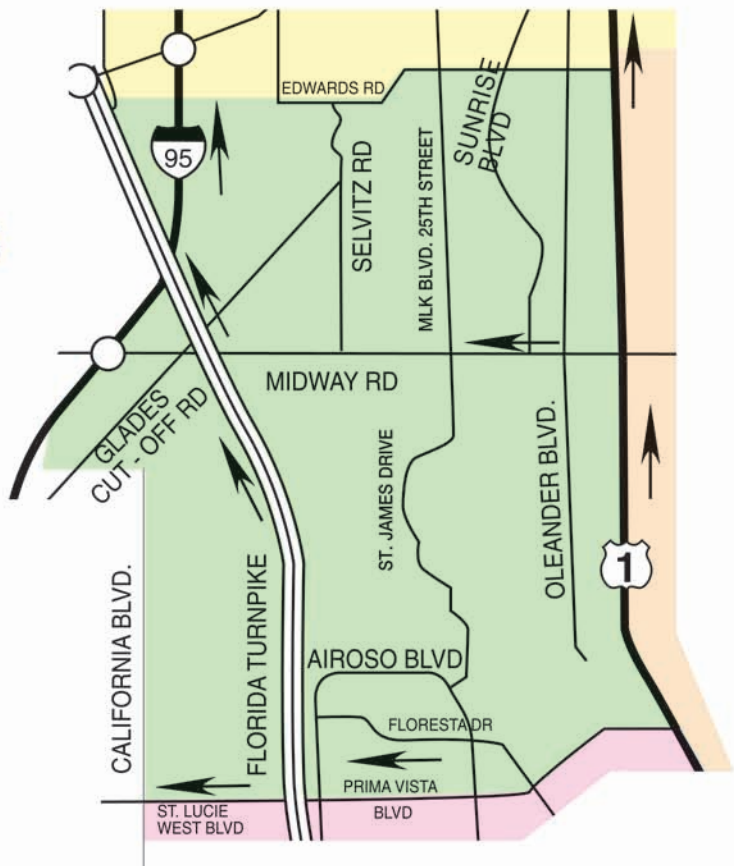
AREA 1

**Emergency
Planning Areas**



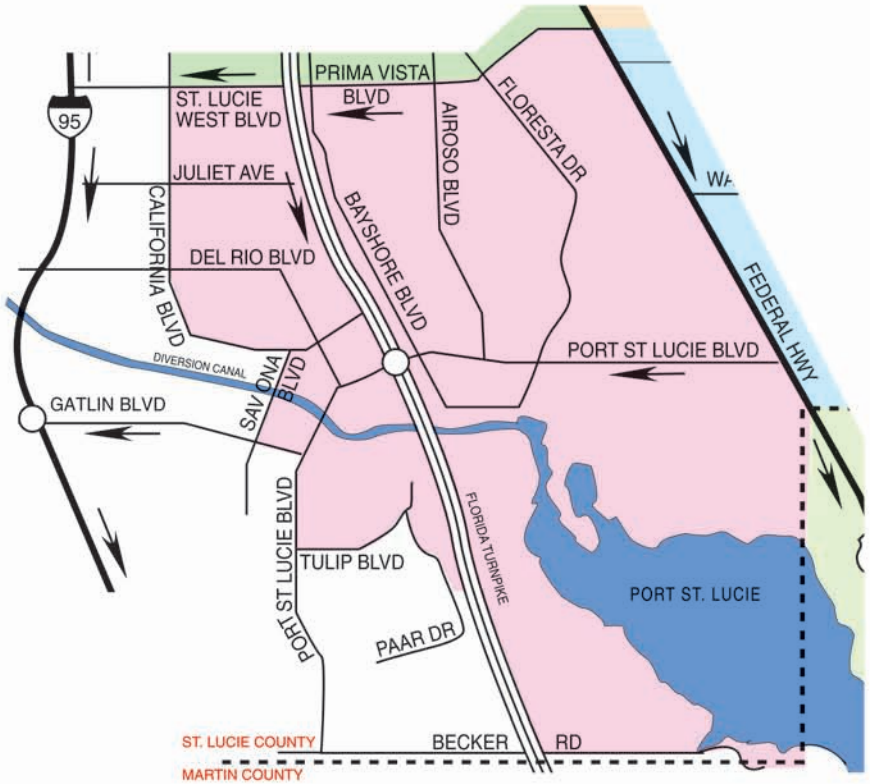
AREA 2



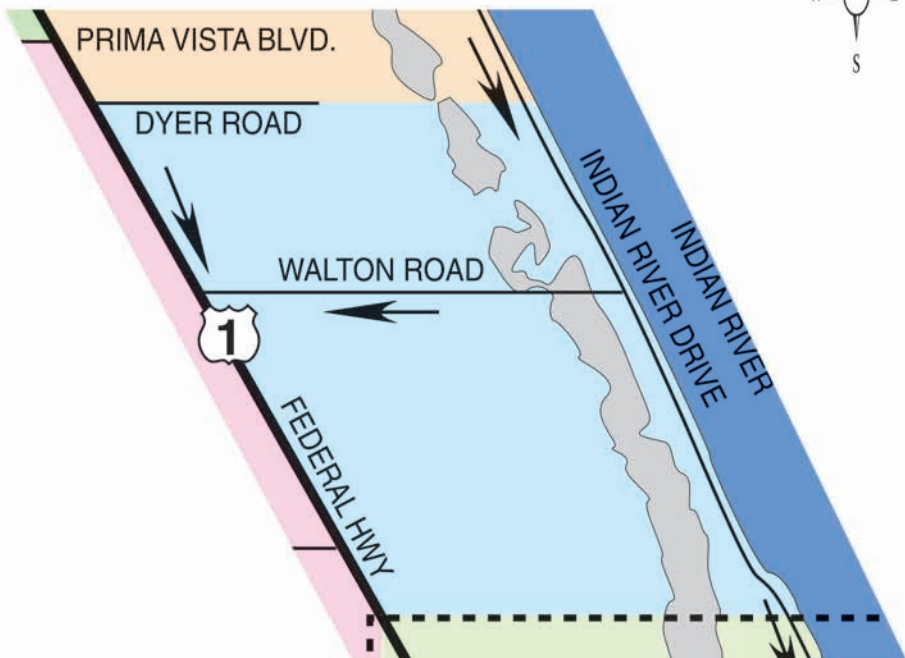
AREA 3**AREA 4**

Arrows depict recommended evacuation routes.

AREA 5

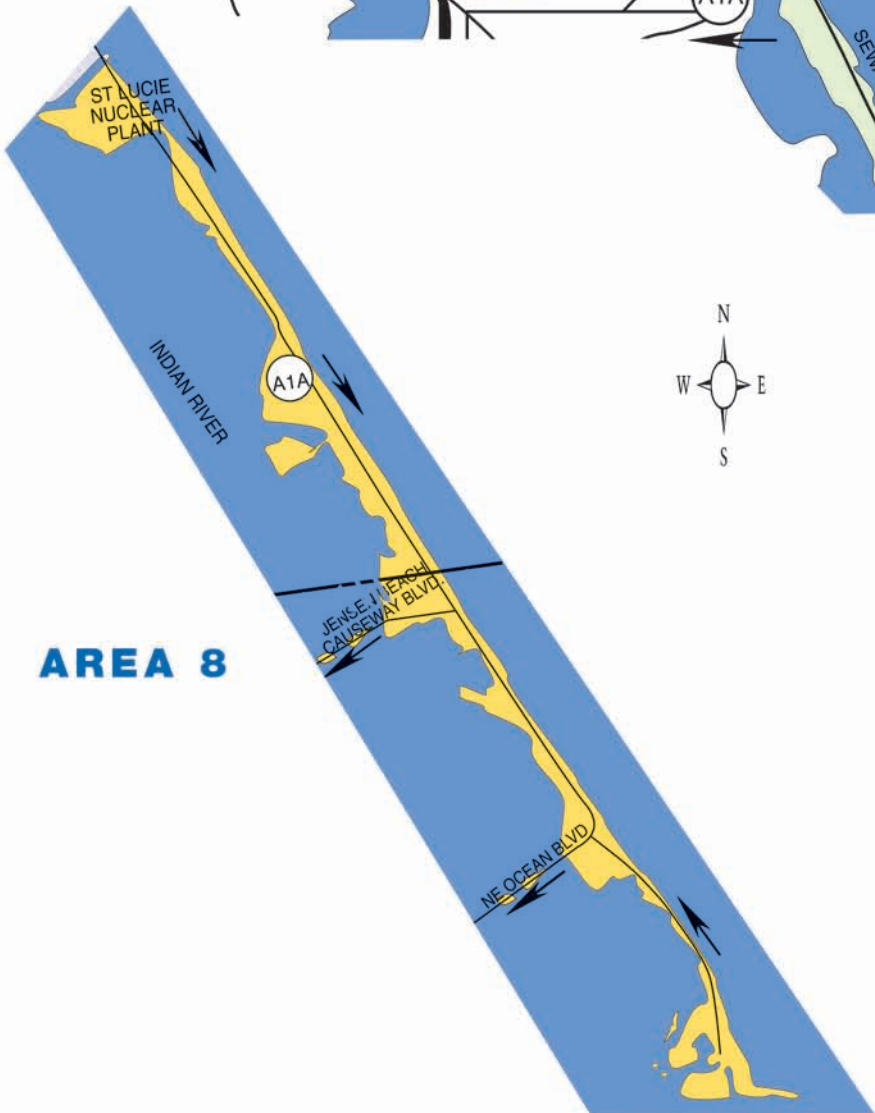
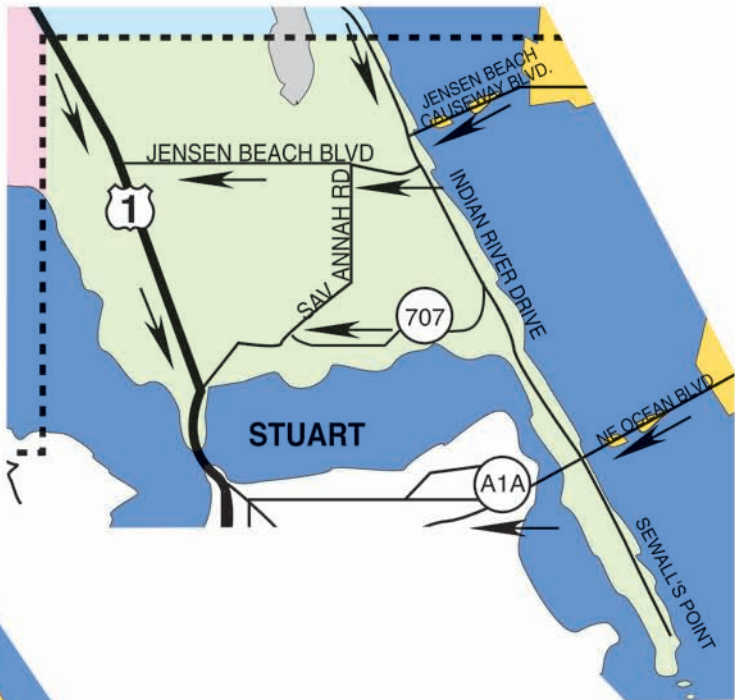


AREA 6



Arrows depict recommended evacuation routes.

AREA 7



AREA 8



Arrows depict recommended evacuation routes.

EVACUATION ROUTES

■ This map shows the area within 10 miles of the St. Lucie Nuclear Power Plant and suggested evacuation routes, along with additional roads to be used as landmarks.

■ Locate the areas where you live and work, and determine the most convenient evacuation route from your residence and place of business.

■ For quick reference, when you have determined your evacuation route, write the information on the detachable card at the back of this booklet.

■ Please check area enlargements on previous pages for the area in which you live.

FOR QUICK REFERENCE

Sirens - If you hear an outdoor warning siren, immediately tune to local radio or television stations for further instructions. An emergency siren sounds for at least five minutes; a siren test lasts only about two minutes. Hearing a siren **does not** necessarily mean to evacuate. If possible, alert your neighbors.

Special Needs - If you have special emergency needs (such as physical or mental impairment, elderly and homebound, or don't drive), fill out the business reply card inside this booklet for the appropriate county in which you live, and mail it immediately. Special arrangements will then be made for your care in the event of an emergency.

Children in school - If your children attend schools in the emergency planning area (see pages 8-9), **please do not try to pick them up**. Schools follow their own evacuation procedures, which will be explained on local radio and television stations.

Emergency numbers:

- St. Lucie County Public Safety Department: (772) 462-8100
- Martin County Division of Emergency Management: (772) 287-1652

Radio and TV stations St. Lucie and Martin counties

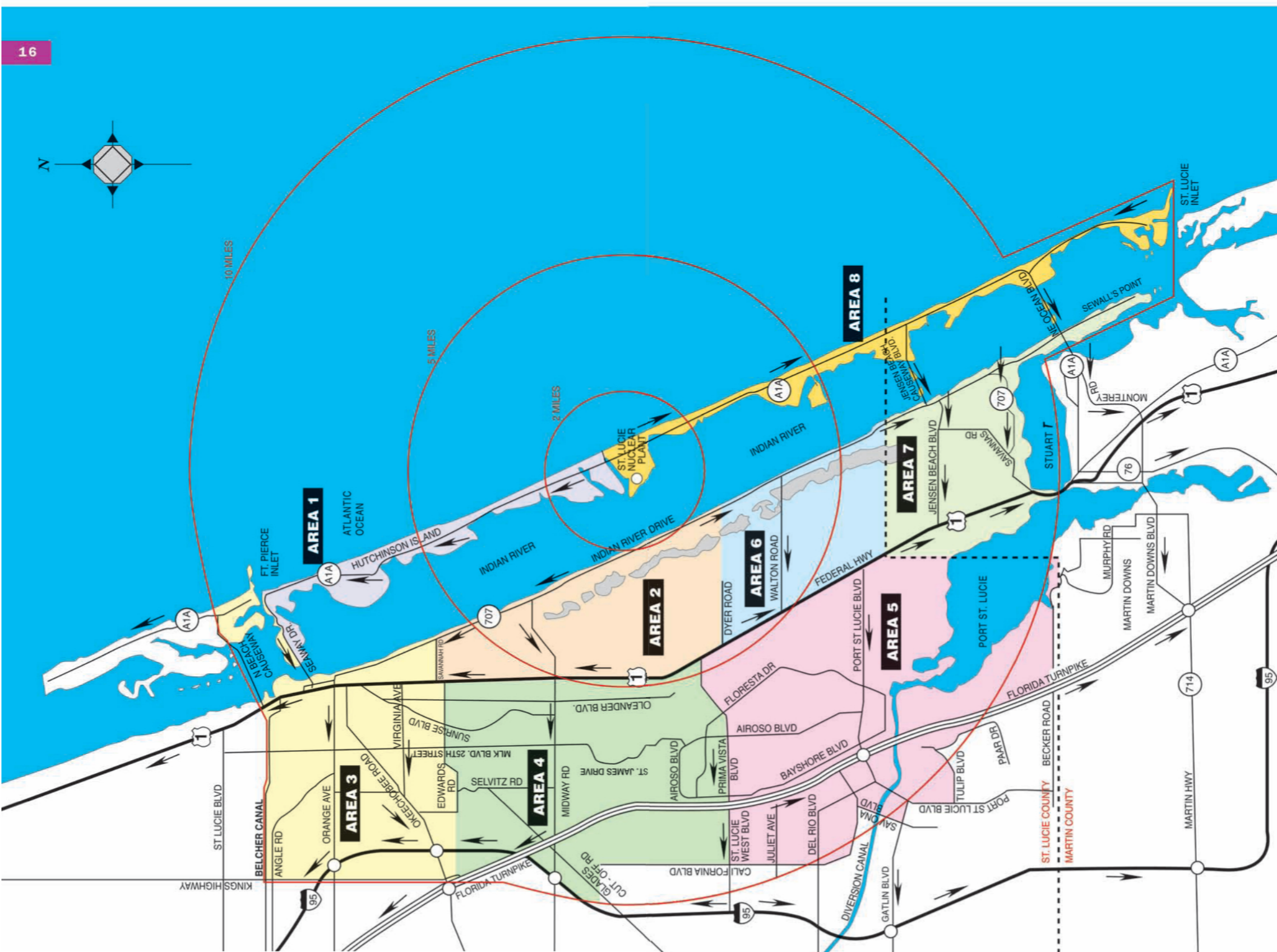
AM RADIO		FM RADIO	
WJNX-1330	WQCS-88.9*	WKGR-98.7	
WIRA-1400	WZZR-94.3	WHLG-101.3	
WSTU-1450*	WGYL-93.7	WAVW-92.7	
WPSL-1590*	WOVV-95.5	WQOL-103.7	
	WOSN-97.1	WFLM-104.7	

TELEVISION**

WPTV-CH 5	WFLX-CH 29
WPEC-CH 12	WTCN-CH 16*
WPBF-CH 25	WTVX-CH 34

*Primary Emergency Alert System station

**Consult area cable listing for these channels.



EVACUATION ROUTES

Study the map, and make a note here of your evacuation route from home and work.

If you are told to evacuate, take this booklet with you.

I live in area _____

Evacuation route: _____

I work in area _____

Evacuation route: _____

School pick-up point: _____

Shelter supplies packed: (see page 6) _____

Pets and livestock cared for: _____

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Important
Safety Planning
Information
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